

Severe local storms, November, 1930—Continued

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Hicksbaugh to Reganville, Tex.	15				50,000	Tornado	Houses unroofed or moved from foundations; service station demolished; 10 persons injured.	Official, U. S. Weather Bureau.
Darlington to northwest Lincoln County, Miss.	15-16	10 p. m.-1 a. m.	880	1	50,000	do	Character of damage not reported; 15 persons injured.	Do.
Fern Springs to Noxubee County, Miss.	15-16		200		15,000	do	Character of damage not reported; 11 persons injured.	Do.
Paw Paw, Mich.	16					Winds	Large barn wrecked; several farm buildings damaged.	Do.
Rockport, Ind. (7 miles west).	16				5,000	Tornadoic wind	Trees uprooted; farm buildings and overhead wires damaged.	Do.
Minnesota (northwestern)	16					Ice	Overhead wires considerably damaged.	Do.
Wisconsin (southeastern)	16				2,000	Wind	Considerable minor damage to boats and other property.	Do.
North Dakota, South Dakota, and northwestern Minnesota.	16					Sleet	Wire lines snapped; highway and rail traffic interrupted, considerable damage in Fargo and Moorhead.	Do.
New Mexico (southwestern).	17-19					Snow and wind	No details.	Do.
New Mexico (northeastern).	18-19			2		do	Some loss of sheep, cattle, and poultry.	Do.
Colorado (east of Continental Divide).	18-20			9		Blizzard	Much livestock lost; extensive property damage; highways impassable for several days.	Do.
Bethany, Okla., and vicinity.	19	9.30-9.58 a. m.	25-150	23	250,000	Tornado	About one-fourth of town of Bethany demolished; many houses, barns, and outbuildings completely wrecked; 77 persons seriously injured; path 7 miles long.	Do.
Carrier, Okla.	19	10 a. m.	250		20,000	do	Minor property damage; 4 persons injured.	Do.
Victoria, Kans. (near)	19	10.15 a. m.			20,000	do	Schoolhouse demolished; farm buildings damaged; 15 persons injured.	Do.
Neal, Kans., and vicinity	19	2 p. m.	200		15,000	do	7 buildings blown down; several residences damaged; 2 persons injured; path 7.5 miles long.	Do.
Leanna, Kans.	19	2.30 p. m.	100		12,500	do	Several residences, a church, and farm buildings damaged; path 3.5 miles long.	Do.
Valley Falls, Kans.	19	4 p. m.			500	Tornadoic wind	Radio tower blown down; farm buildings damaged.	Do.
Ola, Ark.	19	8.40 p. m.	300	1	230,800	Tornado	Character of damage not reported; 12 injured.	Do.
Cleveland, Ark.	19	10 p. m.	60		6,000	do	Character of damage not reported.	Do.
Courtland, Kans.	19	P. m.			2,000	Wind	Barns unroofed; small buildings lifted from foundations.	Do.
Marlow, Okla. (north of)	19		100		500	Tornado	Minor property damage; path 1 mile long.	Do.
Minnesota (northwestern)	19					Ice	Overhead wires damaged.	Do.
Nebraska (northern and western).	19-20					Sleet	Considerable damage to telephone and telegraph lines; wire communication suspended for several days.	Do.
North Dakota (southwestern).	19-20					Wind, snow, and sleet.	Chief damage to telephone and telegraph poles and wires; highways blocked.	Do.
Charles Mix County north to Faulk County to east border of the State, S. Dak.	19-20				400,000	Ice	Heavy damage to wires.	Do.
Manilla, Iowa	20	3.30 a. m.				Tornado	Character of damage not reported.	Do.
Los Angeles, Calif.	22					Wind	Considerable damage to trees and roofs.	Do.
Maryville, Mo.	25					do	Some damage to telephone and telegraph poles.	Do.
Nebraska (southeastern)	25					do	Many poles broken off; buildings damaged at scattered points.	Do.
Illinois (northern and central).	29	A. m.				Ice	Highway traffic difficult and dangerous, much delay; several persons injured.	Do.

RIVERS AND FLOODS

NOTE.—Due to the absence of complete reports at this time, the November description of rivers and floods will be included in the December issue of the REVIEW.—*Editor.*

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

Judging from reports received, the number of days with gales over the northern part of the ocean was not far from the normal, although north of the thirty-fifth parallel these gales were unusually well distributed. As will be shown later, a number of rather unusual disturbances also occurred in southern waters.

According to press reports, winds of hurricane force swept the Panama plantation in the Laceiba zone on the 8th, destroying 58,000 banana trees besides demolishing a number of buildings. This storm must have been extremely local in character, as no reports have as yet been received from vessels involved. On the 7th the

American five-masted schooner *Dunham Wheeler* ran into a heavy gale off Cape Canaveral, on the east coast of Florida, and on the following day the crew were obliged to abandon ship, but were rescued by the American steamship *Aztec*. This gale was a "norther," as on the 8th the barometer reading at Norfolk was 30.70 inches and at Kingston, 29.92 inches, with northeasterly gales along the Florida coast.

The number of days on which fog was reported in different localities is as follows: Over the Grand Banks, from 5 to 7 days; along the American coast between the thirty-fifth and forty-fifth parallels, from 5 to 10 days; over the steamer lanes east of the thirty-fifth meridian, from 3 to 7 days; in the Gulf of Mexico, on 3 days.

TABLE 1.—Averages, departures and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, November, 1930.

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland	29.62	()	30.20	15th	28.90	24th.
Belle Isle, Newfoundland	29.89	+0.01	30.36	12th	29.06	26th.
Halifax, Nova Scotia	30.14	+0.19	30.62	4th	29.34	27th.
Nantucket	30.17	+0.15	30.74	29th	29.26	25th.
Hatteras	30.19	+0.12	30.76	29th	29.58	25th.
Key West	30.09	+0.04	30.28	28th	29.96	16th.
New Orleans	30.16	+0.01	30.58	1st	29.76	16th.
Cape Gracias, Nicaragua	29.92	+0.02	29.98	6th	29.84	3d.
Turks Island	30.05	+0.06	30.18	29th	29.94	3d.
Bermuda	30.14	+0.06	30.56	30th	29.56	5th.
Horta, Azores	30.19	+0.09	30.58	6th	29.70	20th
Lerwick, Shetland Islands	29.58	+0.12	30.25	17th	28.87	26th.
Valencia, Ireland	29.81	+0.08	30.75	11th	28.84	2d.
London	29.85	+0.09	30.72	12th	28.92	2d.

¹ No normal available.

² Based on other date or dates.

³ From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

⁴ From normals based on 8 a. m. observations.

Charts VIII to XI cover the period from the 2d to 5th, inclusive, and show the disturbance off the American coast as well as that in the vicinity of Europe.

On the 6th the European Low was central in the English Channel, and westerly gales prevailed as far west as the twentieth meridian. On the same day Father Point, Quebec, was also near the center of a depression and winds of force 7 and 8 were reported by vessels between the thirty-fifth and forty-seventh parallels. On the 7th conditions similar to those of the previous day prevailed off the coasts of Canada and New England, while on the 7th as well as the 8th the "norther" previously referred to, was in southern waters.

On the 8th westerly gales occurred over the middle section of the northern steamer lanes, while on the 9th and 10th comparatively moderate weather was the rule over the greater part of the ocean.

From the 11th to 16th there ensued a period of heavy weather that reached its greatest intensity on the 13th and 14th when the storm area covered the region from the thirty-fifth to forty-fifth parallels and thirty-fifth to fifty-fifth meridians, where winds of hurricane force were

reported by a number of vessels. By the 16th this disturbance had decreased in intensity, although moderate to strong gales were still encountered in the northern steamer lanes.

From the 19th to 23d comparatively low pressure occurred over the region usually covered by the North Atlantic High, the barometer at Horta reaching its minimum reading of 29.70 inches on the 20th, when the center of this Low area was near 50° N., 32° W. The Low moved slowly eastward, accompanied by moderate to strong gales, and on the 22d was over the North Sea, with barometric readings of from 28.80 to 28.94 inches reported by stations on the east coasts of England and Scotland.

On the 23d a Low was central near Belle Isle, Newfoundland, and a second near 55° N., 28° W. From that date until the 26th winds of gale force prevailed over the middle and eastern sections of the steamer lanes.

On the 25th Nantucket was near the center of a depression, and while moderate weather was reported at time of observation near the center, the region between the thirtieth and thirty-fifth parallels was swept by strong westerly gales with a comparatively uniform increase in barometer readings from the fortieth to thirtieth parallels. On the 26th the center was near Father Point, where the barometer reading was 28.88 inches, and westerly gales were still reported from the vicinity of Hatteras, while moderate conditions prevailed over the region between these two points.

By the 27th this Low had apparently begun to fill in, while there were indications of a secondary forming about halfway between the Bermudas and Nantucket, although it was impossible to determine the position accurately, due to lack of observations. On this day the storm area covered the greater part of the region between the thirtieth and fortieth parallels, and the fifty-fifth and seventy-fifth meridians.

From the 28th to 30th northeast trades of force 7 and 8 were reported by vessels near the east coast of Cuba.

On the 29th westerly to northwesterly gales, accompanied by comparatively high pressure, occurred between the Bermudas and Nova Scotia, and on the 30th between the fortieth meridian and east coast of Newfoundland.

OCEAN GALES AND STORMS, NOVEMBER, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Sagaporack, Am. S. S.	New York	Copenhagen.	58 27 N	27 00 W	Oct. 31	8 p., 1	Nov. 2	28.63	S	NE, 11	N	11	S-E-N.
San Benito, Br. S. S.	Castilla	Boston	16 10 N	86 54 W	Nov. 2	11 a., 2	do	29.90	W	W, 9	W	9	Steady.
Gonzenheim, Ger. S. S.	Newcastle-on-Tyne.	Baltimore	35 47 N	65 32 W	do	4 a., 2	do	29.97	NE	W, 3	NNE	10	W-N.
Hoflaan, Du. S. S.	Rosario	Hull	43 27 N	9 04 W	do	2	Nov. 4	29.61	SW	SW, 10	NW	12	SW-NW.
San Macedonio, Br. S. S.	River Humber.	Mexico	48 30 N	11 00 W	Nov. 1	8 a., 2	Nov. 5	29.41	SW	W, 9	N	11	WSW-NW.
Hastings, Am. S. S.	Pensacola	Bremen	36 32 N	67 41 W	Nov. 3	10 p., 3	Nov. 4	29.95	E	E, 7	S	10	E-SE-S.
Georgia, Dan. S. S.	Norfolk	Rotterdam	49 36 N	12 40 W	Nov. 2	Noon, 3	Nov. 3	29.33	W	NNW, 10	NW	11	Steady.
Aquitania, Br. S. S.	Southampton	New York	48 51 N	28 54 W	Nov. 4	6 a., 4	Nov. 4	29.26	S	WSW, 12	NW	12	WSW-WNW.
Henri Jaspard, Belg. S. S.	Antwerp	do	50 52 N	24 00 W	Nov. 1	2 p., 4	Nov. 5	28.75	SW	W, 10	NW	12	WSW-W-NW
Lotte Leonhardt, Ger. S. S.	Ardrossan	Tampico	44 00 N	12 30 W	Nov. 5	—, 5	Nov. 6	29.81	W	W, 11	NNW	11	W-NW.
Sneaton, Br. S. S.	St. Vincent	Rotterdam	49 02 N	4 39 W	do	Noon, 5	do	29.32	S	SSE, —	NE	10	SSE-ESE.
Bellflower, Am. S. S.	Liverpool	Boston	42 47 N	66 30 W	Nov. 6	Noon, 6	Nov. 7	29.57	WSW	WSW, 9	NW	10	W-NW.
Marie Leonhardt, Ger. S. S.	Norfolk	Murmansk	62 05 N	5 56 W	Nov. 7	—, 7	Nov. 8	28.72	SW	SW, 8	W	11	WSW-WNW.
Valcorusa, Ital. S. S.	Montreal	Genoa	35 56 N	5 47 W	do	Noon, 7	Nov. 9	30.04	E	E, 6	ENE	9	Steady.
City of Joliet, Am. S. S.	New Orleans	Havre	40 25 N	54 00 W	Nov. 10	11 p., 10	Nov. 15	29.38	NNW	NNW, 7	WNW	12	N-NW.
Boschdijk, Du. S. S.	Port Said	Boston	43 26 N	46 29 W	do	4 p., 11	Nov. 12	29.61	SSE	S, 9	NNE	8	10
Nessian, Br. S. S.	Swansea	Montreal	54 00 N	33 05 W	Nov. 11	6 p., 11	Nov. 11	29.57	S	S, 9	NW	10	S-W-NW.
Dresden, Ger. S. S.	Cobh	New York	44 50 N	45 38 W	Nov. 12	—, 12	Nov. 14	29.84	NE	NE, 10	NNE	10	NE-NNE.
Lotte Leonhardt, Ger. S. S.	Ardrossan	Tampico	35 34 N	41 50 W	do	—, 13	Nov. 15	29.63	S	WSW, 11	W	12	SW, 12
Murex, Br. S. S.	Rouen	Key West	36 24 N	40 45 W	do	10 p., 13	Nov. 14	29.14	S	SSW, 11	WSW	12	Steady.
Conte Grande, Ital. S. S.	Gibraltar	New York	37 53 N	41 30 W	Nov. 13	2 a., 14	do	28.78	SSE	NW, 10	NW	12	SSE, 12
Aden Maru, Jap. S. S.	Glasgow	Norfolk	44 03 N	39 31 W	Nov. 14	Noon, 15	Nov. 17	28.91	S	N, 10	W	11	ESE-E-N.
Jalapa, Am. S. S.	Boston	Manchester	54 11 N	27 20 W	Nov. 16	4 p., 16	Nov. 16	29.56	E	E, 12	SSE	12	ESE-SSE.
Natirar, Am. S. S.	Bremen	Boston	47 42 N	36 04 W	Nov. 19	11 p., 19	Nov. 22	29.18	NNW	NNW, 7	NW	10	SW-W-NW